

MISC DOCS FROM RELATED CO'S.

BDICWIRC-04

July 14, 1983

AFFIDAVIT

DCO

FIRST INTERCONTINENTAL DEVELOPMENT CORP.

908 - 15TH STREET, SUITE 6
SANTA MONICA, CA 90403 USA
TEL. (213) 451-4652

January 11, 1983

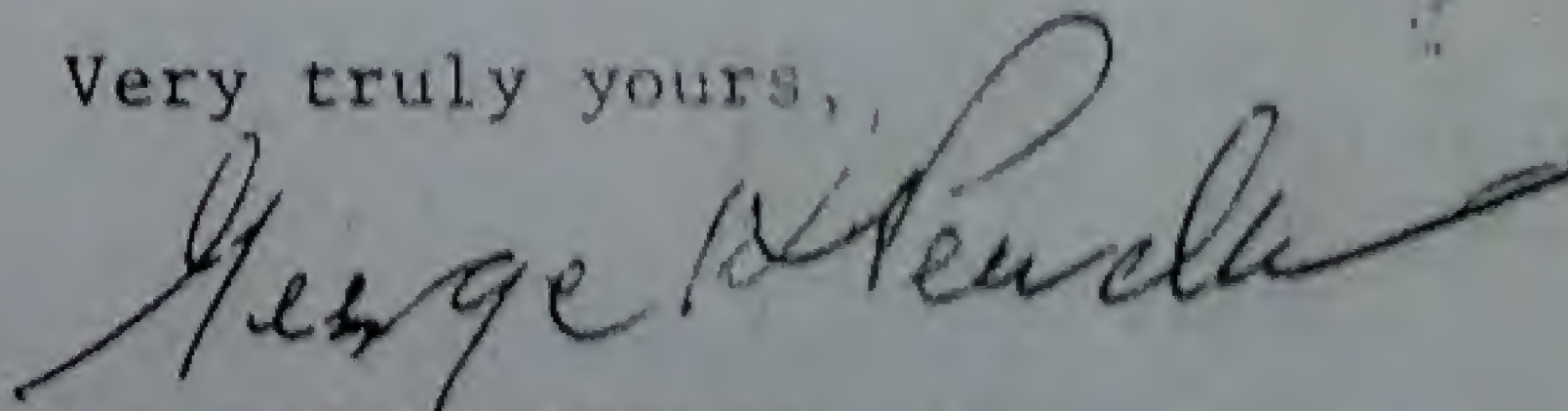
Robert B. Nichols
5100 Via Dolce, Suite 107
Marina del Rey, California
90291

BDICWIRC-01

Dear Bob,

Please find, enclosed, for your records, a copy of the resolution, resulting from a meeting of the Board of Directors of First Intercontinental Development Corporation via conference call on January 8, 1983.

Very truly yours,



George K. Pender,
President

GKP/mmi
Enclosure

April 13, 1983

Joseph F. Preloznik
212 East Washington Avenue
Madison, Wisconsin 53703

BDICW/RC-02

Dear Joe,

Pursuant to your request today, I am outlining below the projects we discussed.

A two story building of approximately 7500 square feet with concrete walls and floors should be adequate to house the R & D position I described to you. The initial projects would be:

1. A 9mm calibre machine pistol with an adjustable cycle rate of fire.

2. An assault rifle of either 5.56 or 7.62 NATO calibre with selective fire and with the option of incorporating laser sighting in the foregrip.

3. A long distance sniper rifle with a one mile plus range.

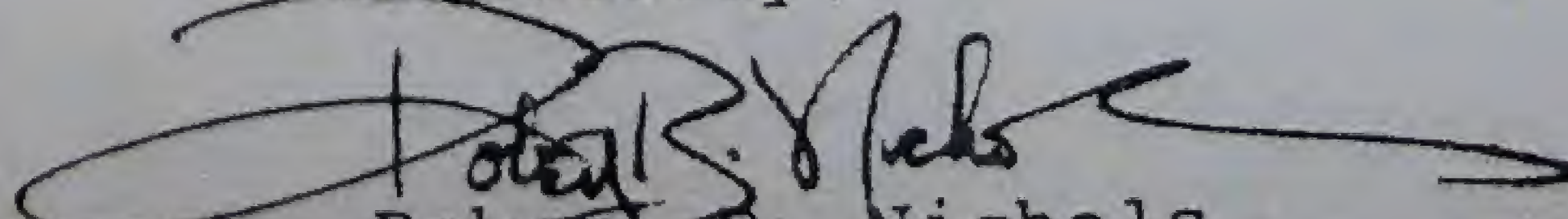
4. A small portable rocket system (cartridge activated off the end of a disposable adaptor which would attach to the assault rifle). It would have a range of approximately 600 meters with an effective detonation area of approximately 100 meters with a combined effects charge.

The time frame for the first three above projects to production would be three months and six months for the rocket system. As I referenced today, once a cash flow is generated, we should immediately develop a caseless sub-machine gun, as well as a caseless assault rifle, for which I have the technology. My recommendation would be to cottage-out the different non-sensitive components with final assembly of the items to take place at the reservation.

A thirty percent partnership agreement can be activated for 2.75 million U.S. dollars. I wish to emphasize this is not a share offering. All marketing would be handled on an equal 50/50 basis and all profits would be equally divided.

Should there be any questions with regard to my credibility, verification can be made through FIDCO. I have enclosed a copy of that appointment. If this position offering on the above projects becomes no longer available, I will advise you immediately.

Sincerely,



Robert B. Nichols

RBN/eh
Enclosures

FIRST INTERCONTINENTAL DEVELOPMENT CORPORATION

First Intercontinental Development Corporation (FIDCO) is a corporation of California, U.S.A.

The principals of the corporation are as follows:

- ROBERT A. MAHEU - Senior Vice President and Director. Former Chief Executive for Howard Hughes Operations. Senior Consultant and Associate in Leisure Industries and Management Consultant to other major U.S. companies.
- GEORGE K. PENDER - Chairman and Director. Former Director of Pacific Ocean area of Burns and Roe, Inc., an international engineering and construction corporation with active projects on all seven continents of the world. Senior Engineer Consultant to Burns and Roe, Inc.
- KENNETH A. ROE - Director. Chairman and President of Burns and Roe, Inc., International Engineers and Constructors, a family corporation owned by Kenneth Roe and his family. Major current project of the company is the engineering design and construction of the U.S.A. Fast Breeder Nuclear Reactor Plant in conjunction with Westinghouse Electric Corporation which is responsible for the nuclear system supply of steam. Construction value of present business backlog of Burns and Roe, Inc. is in excess of six billion U.S. dollars.
- FRANCIS T. FOX - Vice President and Director. Former General Manager of Los Angeles International Airport. Former Director of Aviation for Hughes Nevada Operations (now Summa Corporation). City Manager of San Jose, California (third largest city in California). President of Foundation for Educational Services, Los Angeles, California.
- CLINT W. MURCHISON, JR. - Director. Chairman, President and Owner of C. W. Murchison Companies worldwide. Owner of Dallas Cowboys NFL football team, headquartered in Dallas, Texas.
- ROBERT B. NICHOLS - Director, Senior Vice President and Chairman of Investment Committee. Chief Executive Officer of R.B.N. Companies International, a holding company, which through its various subsidiaries, is engaged in, among other things, one of the largest retail operations in the Pacific Basin; the manufacturing and development of high technology electronics; real estate development; construction; and international finance.
- WILLIAM M. PENDER - Director and Senior Vice President, Finance. Licensed Contractor, State of California.
- MICHAEL A. McMANUS - Director, Vice President and General Counsel. Assistant to the President of the United States at the White House, Washington, D.C.
- GLENN R. SHOCKLEY - Director. Consultant to Fortune 500 Companies in Business Management. Internationally known as Financial Consultant in Funding.

BDICW/RC-04

July 14 1983

AFFIDAVIT

Robert B. Nichols
5100 Via Dolce, #107
Marina Del Rey, Calif. 90291

BDICW/RC-03

FIRST: The undersigned, David G. Eippel, attorney-at-law and member of the Bar of the United States District Court, District of Columbia, since April 9, 1940, further identified as holding U.S. Social Security number 715-03-5000, and U.S. Passport number 042083656, herewith states that he is the attorney of record for the duly authorized lender's agent, said agent having been appointed by and authorized to act for a Swiss Trust which has billions of U.S. dollars to loan to qualified borrowers. Further, the undersigned hereby states that he has knowledge of multiple loans actually having been effected by said Trust, through the offices of said Lender's Agent.

SECOND: Current rate of interest: 8 - 8 1/2%
Term: 20 years and 1 day
Emission: 100%
Remission: 2% to Lender and 1% to Lender's Agent
Consulting fee: One percent to undersigned, as trustee for all intermediaries, due upon actual funding. No advance fees are authorized to be accepted by any person, including undersigned.

THIRD: The use of this document is restricted to negotiations, by the addressee, with major banks and borrowers. Its purpose is to establish the credibility of the addressee, and of the undersigned, in said negotiations.

subscribed and sworn to this 16th day of June 1983.

David G. Sippel
David G. Sippel

44 CA (B 74)

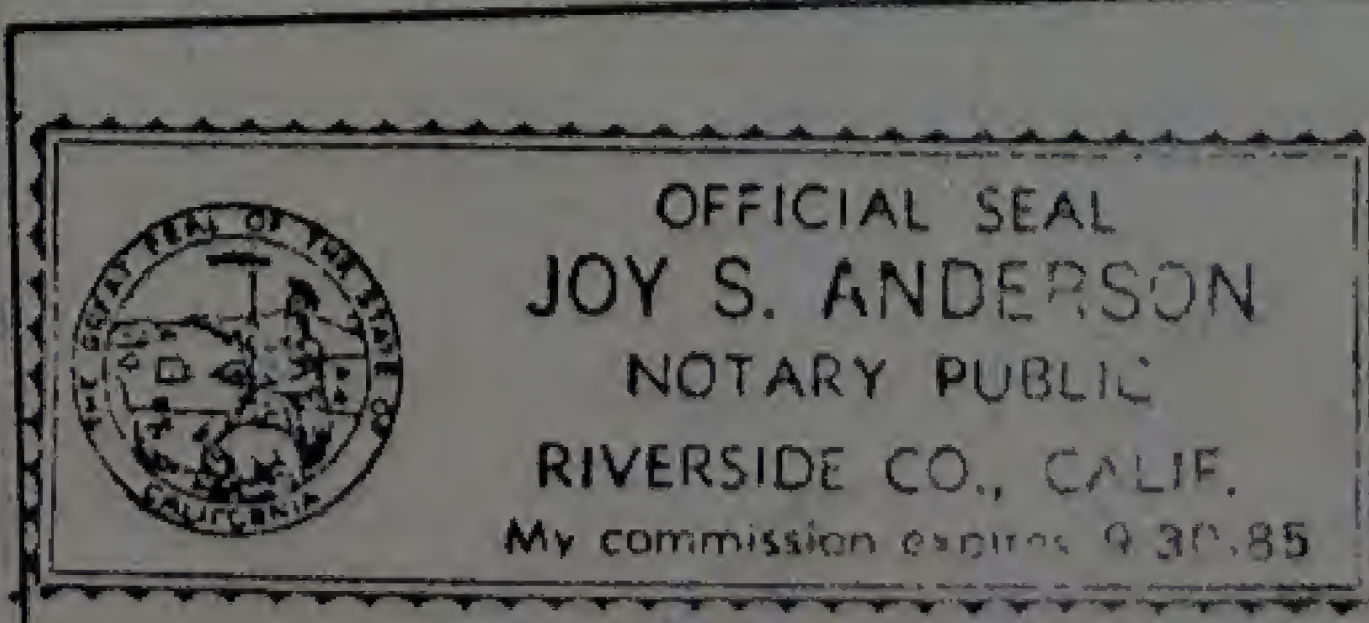
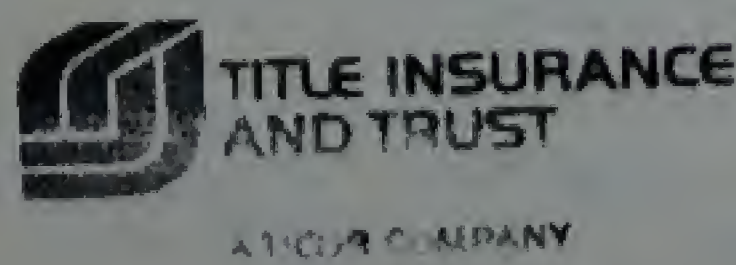
individual)

STATE OF CALIFORNIA }
COUNTY OF Riverside } SS.

On June 16, 1983 before me, the undersigned, a Notary Public in and for said State, personally appeared DAVID G. SIPPEL, proved to me on the basis of satisfactory evidence,

to be the person XXXXX to me whose name is subscribed to the within instrument and acknowledged that he executed the same.
WITNESS my hand and official seal.

Signature: *Joy S. Anderson*
Joy S. Anderson



(This area for official notarial seal)

BDICWIRC-04

July 14, 1983

LETTER OF UNDERSTANDING

From: William M. Frash (Lilac Corp.)

To: Robert Nichols/Michael Reconoshuto (Meridian Arms Corp.)

This is to confirm our verbal understanding in which I have agreed to use my best efforts to obtain a joint venture for your company, Meridian Arms, for the initial sum of five million to fifteen million dollars plus salary and a share in the profits.

As consideration for my effort should the joint venture be successful, I am to receive the following.

Fifteen million down by joint venture partner W. M. Frash to receive \$500,000.

Five million dollars down by joint venture partner W. M. Frash to receive an equal percentage of the above or \$166,666.66. Payment at the time of receipt of the fund from the joint venture partner.

One hundred thousand dollars per year salary for a period of 20 years. Starting at time of go ahead on joint venture. *Promoting Joint Product of the Venture, TO THE BEST OF MY ABILITY I WILL PROMOTE M.A.C. TO RELATED FIELDS.*

Two point share of gross profits determined upon profit from in-house, commercial, and defense projects, agreed as joint venture projects between joint partners.

*Letter
J.M.A.*

If this is your understanding of our agreement, please sign below where indicated.

This is a temporary interim agreement so our understanding is clear prior to my attorney's drawing more complete documentation.

Payment to be made to Lilac Corporation.

William M. Frash
William M. Frash
Chairman of the Board and Chief Executive Officer, Lilac Corp.

Yes, this is my understanding of our agreement.

Robert Nichols
Robert Nichols

Michael Reconoshuto
Michael Reconoshuto

BOB NICMOLS
PETE ZOCOWSKI
PATRICK MORIARTY
MIKE RIKONOSHIUTO

July 27, 1983

MERIDIAN ARMS
CORPORATION

Tom T. Bamford
Vice President,
Research and Development
FMC Corporation

BDICW/RC-05

Dear Tom,

I have received your letter of July 20th and am hastening to respond. Pursuant to your request in our last conversation, I met yesterday with Bob, Mike, Pete and Pat. I would like to touch on the pertinent points of that meeting and also respond to the issues listed in your letter. I have worked with Bob and Mike in organizing this.

Relative to project "venture", point by point from your letter:

1, 2 & 3 -- We would not be transferring any current patents. ✓
Rather, a new portfolio will be developed under the new venture.

The understanding of the underlying energy transfer phenomena is clearly missed by the existing patents, proprietary technology is not covered, and the applications are strictly limited in the control of field geometry, even though the results may be spectacular. We propose to outline technology in the form of patents applied for jointly with FMC to incorporate a total understanding of the phenomena involved, as well as a reduction to practice of generalized solutions. The technology which would be covered in the jointly applied patents would supercede all existing world patents in the field. Had we patented previously, it would only have announced our "edge" in this field and provided solutions to the problems of others in commercial development. When we are prepared to market, we will apply for protection under a comprehensive patent strategy.

We know that the technology contained in the new patents will be not only new and different, but also substantially better than existing patents, satisfying critical deficiencies of the prior art, i.e. the heat transfer "phenomenon of nature" covered in previously existing patents would become a particular applied technology.

We visualize there would be approximately four major patents that would be forthcoming (with some two hundred other patents in related areas):

FROM: [unclear] 005

BOB NICHOLS
PETE ZOCOWSKI
PATRICK MORIARTY
MIKE RICHMOND

July 27, 1983

MERIDIAM ARMS
CORPORATION

BD/CW/RC-05

letter of July 20th and am hastening
request in our last conversation,
and Pat. I would like to
and also respond
with Bob

PERTURBATION: = A DISTURBANCE OF THE REGULAR AND USUAL ELLIPTIC COURSE OF MOTION OF A CELESTIAL BODY THAT IS PRODUCED BY SOME FORCE ADDITIONAL TO THAT WHICH CAUSES ITS REGULAR MOTION

Tom T. Bamford
July 27, 1983
Page Two

KEY
CITATIONS

First, the application of Perturbation Theory to enhanced energy transfer.

Second, the application of high voltage power supplies and associated control circuitry to enhanced energy transfer.

Third, the application of stationary methods with powders and aerosols to enhanced energy transfer.

Fourth, the application of Perturbation Theory to hydrodynamic flow regimes. (SEE "HUNT FOR RED OCTOBER" SUB PROPULSION SYSTEM.)

Other areas which would be covered by the four basic patents include enhanced ballistics, welding, machining, heat treating, chemical processing, cooling high density electronic circuitry, infrared counter-measures and ballistic counter-measures.

You may be assured that by our working through your patent department, our strategy will give us maximum viable protection.

4 -- As the program for which Meridian Arms Corporation was formed was not implemented, no physical assets were developed. The corporation was organized for the purpose of developing and producing a low cost automatic weapon for the developing allied nations of the United States. MAC organized the designing and building of a prototype automatic weapon identified as the G-77 submachine gun, which could be produced in the Philippines, Korea, Taiwan, etc. at a cost under \$50,00 per unit. During the development period, policy changes took place under the Carter Administration, namely Human Rights and Humanitarian Affairs, who felt it was not in the best interest of the U.S. to supply arms of any kind to foreign governments, whether friend or foe.

MERIDIAN ARMS CORPORATION

The G-77 prototype is currently held by MAC under Class 3 Treasury Permits and Department of Justice Identification (available for your perusal). The G-77 technology would be lent to the venture agreement. It is definitive that it is currently a highly sought after, low cost automatic weapon. We reference current requests to start production from the government of Australia, as well as other U.S. allies. Supporting documentation is available upon request. The prototype is in completed form, requires no further development and will meet (has met) JASAP criteria. The technology, complete with production drawings, is in our possession and can promote this weapon into an enhanced ballistic state.

tion

PERTURBATION: = A DISTURBANCE OF THE REGULAR AND USUAL ELLIPTIC COURSE OF MOTION OF A CELESTIAL BODY THAT IS PRODUCED BY SOME FORCE ADDITIONAL TO THAT WHICH CAUSES ITS REGULAR MOTION

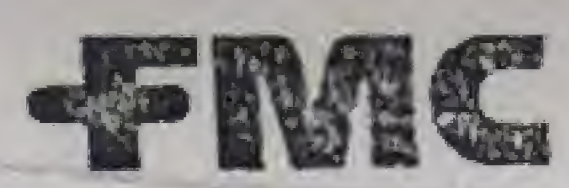
Application of Perturbation Theory to enhanced
er.

Application of high voltage power supplies and
control circuitry to enhanced energy transfer.

Application of stationary methods with powders
to enhanced energy transfer.

Perturbation Theory to hydro-

Laboratories
e Box 530
10505



T. Bamford
May 27, 1983
Page Three

5 -- Bob, Mike and myself are the only active participants in the venture.

6 -- All corporate documentation is current and available for review, including articles of incorporation, minutes, tax statements, licensing, financial books, etc.

7 -- Technology exists within MAC for the production of high-grade N₂O₄ from atmospheric nitrogen. We are advised that currently in the defense related missile programs, as well as on-going space programs, N₂O₄ is required. The total available market value of this contract is \$100 million plus. We have the only technology in the U.S. capable of producing and fulfilling this contract.

8 -- Meridian Arms Corporation has no liabilities.

Per the second portion of your letter:

Regarding the meeting with Pete and Pat, as usual, on a complex program of this nature, all elements were not examined in the detail I am sure would have satisfied all parties. However, a "very rough business plan" is covered in the following:

The main conversation revolved around micro-encapsulation of phosphates, as FMC is currently involved in the field. To lend clarity to what took place, I would like to comment on Mike's experience in this area. Via his process, he has successfully encapsulated silicates, nitrates and oxidizers. He has also consulted in the field of pesticides and typewriter ribbons relative to encapsulation. However, not wanting to make a statement without firm foundation, Mike deferred answering specific questions or making certain comments regarding his encapsulation of phosphates process, until the resulting data comes in from current tests he is involved in with this material. This information will be available this weekend and I will cover this point with you via telephone.

The next significant area touched on was phosphate fertilizer usage data, which must be collected from reliable experienced parties in the field. The time frame given for this undertaking was approximately ninety days. During this time, as the data is collected, Mike would be modeling a program for process development. The modeling, connected with the data collection would converge in approximately six to eight months, with all the necessary elements to develop a pilot process plant, which Mike

believes realistically should show production in the area of ten to fifteen tons per hour. After a brief tailoring period, he feels the program can go to full production and deliver significant impact to the world market within a time frame of one year.

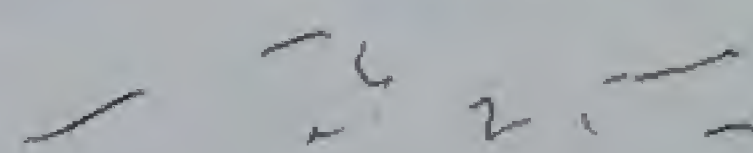
Tom, as you know, Mike's tried and true value is in the field of high voltage and electrostatics and their application. The meetings in San Jose highlighted application of this technology in over one hundred areas that are in-house FMC.

As to your question regarding a demonstration of Mike's ability to cool a steel plate, this can definitely be accomplished at your convenience and it is our hope that this demonstration will satisfactorily substantiate the credibility of the heat transfer technology. Pete suggests this be done after lunch on August 4th.

Per your reference to meetings in Washington, D.C., I assume the meetings with Dr. Faire, Admiral Renkin and the ACCOM people will suffice in this matter.

In closing, we too are very enthused, Tom, and we look forward to an expeditious closing.

Sincerely,



William Frash

WF/en

NOTE.

THE INDIVIDUALS IN FIDOP. HAVE NO
ASSOCIATION WITH DR. J. P. NICKOLS

BOB NICKOLS AND DR. J. P. NICKOLS
ARE NOT RELATED

July 20, 1983

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April 11, 1983

Mr. John Vanderwerker
Intersect Corporation
18952 MacArthur Boulevard
Irvine, California

BD/CW/RC-06

Dear Mr. Vanderwerker,

Being priveleged to information, I am informed, subject to confirmation by you and your organization, I take pleasure in offering you the following:

Quantity: Forty-Two (42) approximately each

Nomenclature: AH1-S

Unit Price: Seven Million Eight Hundred Thousand United States Dollars (\$7,800,000.00)

The price offered is F.A.S. location at Seller's option Europe. The price is net to Buyer possessing the proper documentation and does not include any government considerations (taxes), if any, all of which accrue to the Buyer's account.

For verification of the existence of these products, you are requested to refer to telex transmission occurring during the Spring of 1981 between Union Bank Suisse of Zurich, Switzerland, and Omega Industries of Long Island, New York. The transmissions were addressed to Mr. Parvis Lavi at Omega and were signed by Mr. N.A. porta, bank officer.

Your immediate response to this offer would be greatly appreciated.

Sincerely,

Glenn R. Shockley

GRS/mmi

FMC

July 20, 1983

Mr. William Frasch
10320 Lilac Ridge Road
Escondido, CA 92026

BD/CW/RC-07

Dear Bill:

Your meetings with our CEL group earlier this week have generated a lot of enthusiasm for the potential application of the technologies under discussion. We are to the point, now, where we would like to make a preliminary presentation to our top corporate management and, in order to do so, we need your help in some areas.

First, regardless of the deal structure we may ultimately develop (for now let's call it "the venture"), our management will want to know what is to be covered within the scope of the agreement. With that in mind, we would like you to provide us with the following information:

1. A list of all issued patents which are to be included in the scope of the agreement, the rights of which would be assigned to the venture.
2. A list of all patents applied for which would be included in the scope of the agreement and assigned to the venture.
3. A brief written description of the know-how not covered by patents which would be included in the scope of the agreement and assigned to the venture.
4. A list of physical assets, if any, title to which would transfer to the venture, and their approximate value.
5. A list of the people whom you would expect to be active participants in the venture, and a C.V. on each of these people. Also, a list of references for each of these people. (Unless you know, for sure, that you want to have other people included as active participants, you may want to do this only for Mike at this stage.)
6. Any applicable, legal and financial documentation (incorporation documents, balance sheets, etc.) on the company (or companies) with which FMC would be negotiating the agreement.

Mr. William Frasch

July 21, 1983

7. A list of production and/or development contracts, if any, which would be assigned to the venture, including a brief description of the work to be performed, approximate contract value and performance schedule.
8. A list of liabilities, if any, which you think you may want to assign to the venture.

Second, while we recognize that the objective would be to develop and exploit the technology as fully as possible, we need to provide some focus for the early stages of the venture. I understand that Mike's micro-encapsulation process offers some of the most attractive potential rewards in the short term, both in the commercial side (fertilizers, pesticides, etc.) and in military applications. We need to better understand what would be involved in the development and commercialization of that process. If possible, we would like to have Mike spend some time with Pat Carroll and Pete Weber to discuss the required development efforts and the economics that Mike feels will make the process attractive. It would be ideal if this discussion would result in a very rough business plan for the encapsulation process.

In addition, we think our corporate management might respond favorably to applications of the technology to FMC's manufacturing processes. I understand that Mike feels he could arrange, without great difficulty, to demonstrate the cooling of a thirty pound steel plate (something like a track shoe). Would it be possible for this to be done during my next visit to the West Coast on August 4th or 5th?

Third, discussions continued after you left Tuesday evening, on the advisability of Bob Nichols arranging a meeting for us in Washington, D.C. The outcome was inconclusive. After you have had an opportunity to discuss this internally, please let me have your thoughts.

We are very enthused, Bill. I hope you will bear with us as we try to take this through our approval process.

Sincerely,

T. T. Bamford
Vice President,
Research and Development

Meridian Arms Corporation

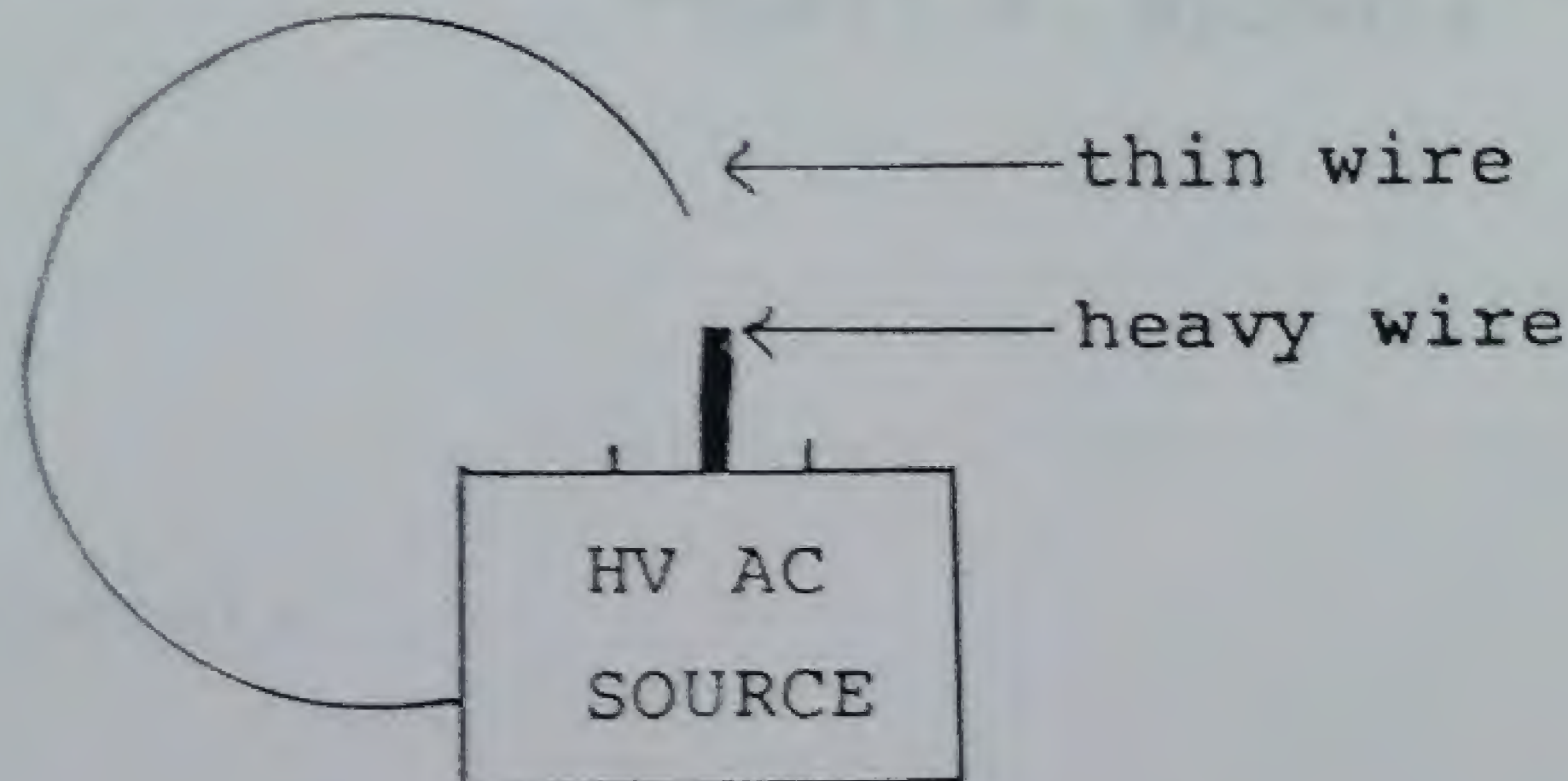
February 10, 1984

Dr. Harry Fair
Tactical Technology
1400 Wilson Boulevard
Room 1014
Arlington, Virginia 2209

Dear Dr. Fair,

This letter is in reference to the Wackenhut Services, Inc. demonstration at Picatinny Arsenal and the points subsequently raised by Peter Zokosky during the 120 mm combustible case discussions in your office.

In the demonstration at Picatinny Arsenal, Michael Riconosciuto discussed electrostatic heat transfer augmentation in a wide range of applications and he demonstrated control of heat in an electric discharge. The demonstration was as follows:



In the discharge, the heat travelled downward, melting the bottom electrode and leaving the top electrode cool. The objective here was to demonstrate control of the direction of heat flow in an electric field.

During the 120 mm discussions, Peter Zokosky mentioned work in progress which extended this fundamental heat transfer augmentation principle to the area of enhanced gaseous fuel devices. Since that time, considerable progress has been made. Also, certain security discrepancies involving Dr. John P. Nichols (to whom I am not related) have been resolved, and his clearances at the Cabazon Arms joint venture are no longer valid. The serious nature of this technology requires that any further development along these lines be carried out within the framework of the proper structure.

PAGE 2 IS MISSING.

Meridian Arms Corporation

Dr. Harry Fair
February 10, 1984
Page Three
- - - - -

Peter Zokosky, Michael Riconosciuto and I have just concluded meetings with regard to the above subject matter. Dr. Fair, we would greatly appreciate your guidance in the pursuit of our goals and feel it is imperative that we assume the correct posture in the business.

I can be reached through the following telephone numbers:

(408) 725-8313

(619) 347-0688

Sincerely yours,

Robert B. Nichols

RBN/eh

cc: Michael Riconosciuto
Peter Zokosky

February 18, 1984

Dr. Harry Fair
Tactical Technology
1400 Wilson Boulevard
Room 1014
Arlington, Virginia 2209

BDCW/RC-08

Dear Dr. Fair,

Pursuant to our telephone conversation, I am enclosing, herewith, the information you had requested.

The technology of enhanced gaseous fuel devices is an outgrowth of the heat transfer work done by Hercules Research, Inc. and Interprobe, Inc. This work has lead to many practical applications which are widespread in their use today, including welding, metallurgy, glass, plastics, semi-conductors and food processing. This is not referencing laboratory curiosities, but rather systems that are in actual use today.

To elaborate on the points of technology brought out in our letter of February 10th, 1984:

Point One: Critical phase suppression to augment total heat content, refers to a method of increasing the heat capacity of an explosive mixture by utilizing the fact that certain materials greatly increase their heat capacity during a phase change. As an example, aluminum is a component of the explosive mixture in BIG BLUE (also known as the Daisy Cutter). We will demonstrate how to achieve a far greater heat contribution to the explosion using an aluminum silicate/silicon dioxide mixture.

Point Two: Volumetric detonation to give effective high speed brissance, refers to an electrical method of initiation of an explosive simultaneously throughout its entire volume at a rate faster than normal propagation.

Point Three: A high efficiency electrohydrodynamic generator, capable of sustained EMP over a wide range of frequencies, refers to the generation of high voltage by explosively driven electret particles.

Point Four: Supersonic delivery capability, refers to a method of producing a set of conditions for detonation of an explosive material in a closed vessel which are equivalent to an optimum cloud in an air fuel device. These conditions occur in the presence of cavitation produced by an explosively driven shock wave through an explosive mixture containing an oxidizer. The net effect here is an explosive performance that is more predictable than conventional air fuel devices, but from a closed

Meridian Arms Corporation

P. 02

February 18, 1984

Dr. Harry Fair
Tactical Technology
1400 Wilson Boulevard
Room 1014
Arlington, Virginia 2209

BD/CW/RC-08

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Meridian Arms Corporation

Harry Fair
Tactical Technology
February 18, 1984
Page Two

compact container.

Point Five: Cloud stability is no longer a performance limiting factor, refers to the use of an electrostatic field in a conventional type air fuel device to augment the cooling of the cloud that occurs normally during adiabatic expansion. Also, the dispersion of the cloud is far more uniform and less vulnerable to ambient conditions in the presence of the field.

Point Six: Controllable blast dispersion to manage the collateral damage problem, refers to controlling the initiation of an explosive in a time frame that is faster than the propagation speed of the explosive wave front. On a macroscopic scale, sections of the explosive mass can be sequentially initiated to control the direction of the blast.

There are two fundamental types of devices which can be built, utilizing this technology. The first is a significant enhancement of the conventional air fuel device, which will be referenced as the "air burst" type. The second is a totally enclosed device which depends on uniform cavitation throughout the explosive mass to set up the required conditions for the high-order detonation. This category of device will be referenced as the "hydro-dynamic" type. The advantage of the hydro-dynamic type are: the delivery capability at high speeds, such as those encountered in long range artillery shells or during re-entry conditions, and the capability of underwater detonation.

The following will expand upon our proposed four part program of numerical modelling, empirical testing of data, test device construction and demonstration:

1. Mathematical modelling and simulation - First, a one day "proof of principle" demonstration should be carried out. This will involve no explosive whatsoever. It will, in a step-by-step fashion, show the soundness of the technology and establish the basis for modelling and simulation. At this point, you will have sufficient input to start a program on your own, meaning that the people involved must intend to follow through with the program. This "dog and pony show" will get your people into the preliminary modelling phase.

2. Test data for verification - Based upon the results of the preliminary modelling, tests will be performed in two categories: the air burst type and the hydrodynamic type. The air burst device tests will include heat of explosion tests in a

Meridian Arms Corporation

Harry Fair
Technical Technology
February 18, 1984
Page Four

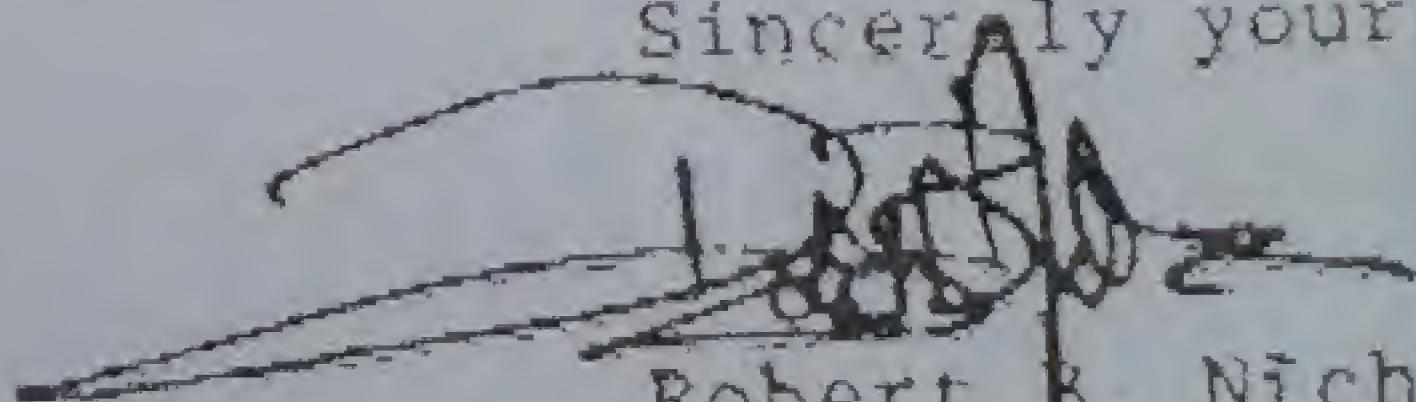
programmer and one person of hand-on engineering and technical expertise in explosives experimental design.

4. Test and demonstration coordination to a major U.S. defense contractor - The satisfactory completion of the project to this point will give us the ability to design and build high order explosive devices with predictable and repeatable performance characteristics. The object of this project is to demonstrate reduction to practice of esoteric technology, not just an understanding of the physics involved.

The present state of the art of air fuel devices is more of an engineering art than a science. The data developed during this program should insure that the full scale test devices will have predictable performance characteristics. This should make practical the coordination of testing high yield devices.

Dr. Fair, I hope this satisfactorily answers the questions you posed during our conversation. Should you require further clarification, please do not hesitate to contact us.

Sincerely yours,



Robert B. Nichols

RBN/eh

URGENT

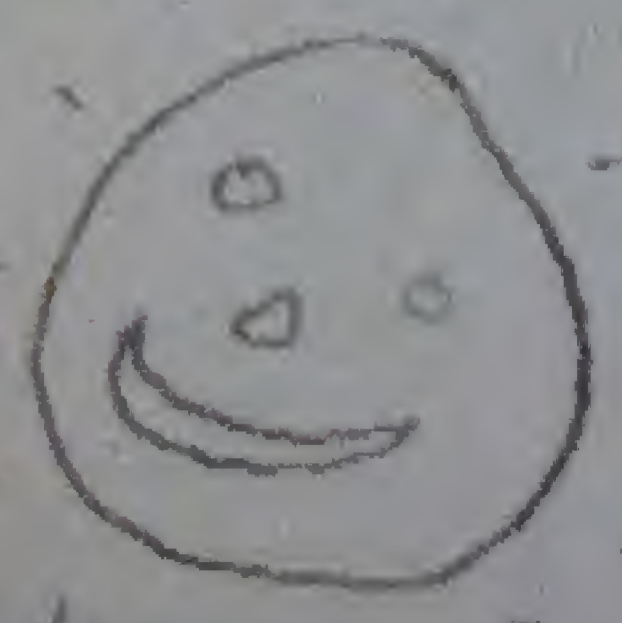
FAX COVER SHEET

PLEASE FORWARD
THE FOLLOWING 6

PAGES TO DAN CASOLARO.

THAT PESKY REPORTER WHO WONT STOP TILL HE GETS
THE WHOLE TRUTH, THANK GOD!! HOPE HE CANT READ THIS!

THANKS KINKOS



Ray Lewis

TOWARD
SWING 6

DAN CASOLARO.

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Lannis

FROM:- **THOMAS W. C. PAGE**
C.Phys., M.INST.P., M.B.I.M., F.Prof. BTM (Dip. BTM)

International Ballistics Consultant

59 Correnden Road, Tonbridge, Kent TN10 3AX,
Telephone:- Tonbridge (0732) 356926 Telex:- 95151 Fax:- (0732) 360178

BD/CW/RC-09

01. Seph. 1988

Dear Peter.

I came across an envelope containing details of an F.A.E. device - I believe you gave it to me in February - but I can't be sure I ever made comment on it.

As you are aware FAE's are banned in NATO although most if not all Counties have been working on them for many years. The concept is not new, but the delivery mechanism and initiation have been shown to be the most difficult to design and operate in an operationally acceptable manner.

The device that you propose is novel but I believe that launch conditions will demand a much stronger container to contain the fuel. Hence the burst strength goes up, requiring a larger charge to rupture and dispose. Bearing in mind the device is for use against 2nd and 3rd Echelon forces long range is of paramount importance and hence you are looking at Ranges 24-40km and Muzzle Velocities of the order 820-920m/sec. 52+ Calibre ordnance with chamber capacities of the order of 22.9 - 27.9 litres will give the device a softer ride, but such ordnances - whilst under design - may never be fielded and hence launch conditions should be centred around the existing 39cal 155mm tube or maybe the 45 cal 203mm tubes. Whatever you use there will be problems because of the launch conditions - worse in 39cal but easier in 52+ cal, with existing charge systems. Newer charges under development for both 52+cal 155mm and the 203mm cannons will create the same problems as 39 cal ordnance. Pressures of the order of 350Mpa @ 21°C with MV's at 900-950m/s.

At the Upper Firing temperature of +52°C or + 63°C the pressures rise to 400MPa with MV's at 950 - 1000m/sec. Such devices should also be designed for operational temperature limits of -46°C to 63°C (world wide).

I hope the above comments are of help, forgive me if I have already replied. I am sure the sentiments will be the same.

Truly

Tom